

WHAT IS CLAIMED IS:

1           1.     A method for testing a petroleum product produced during refining to classify said  
2 product, said method comprising the steps of:

3                   a) obtaining and preparing a representative sample of said product;  
4                   b) forming a digital image of said sample with a scanner; and  
5                   c) processing said digital image by extracting and filtering said digital image to  
6 produce a representative lustre measurement of said sample.

2.     A method for testing as recited in Claim 1 wherein said steps b) and c) are iterated  
a plurality of times and including the additional step of totaling said representative lustre  
measurement of said sample produced during each of said iterations and then averaging said total  
to obtain an average lustre measurement of said sample.

3.     A method for testing as recited in Claim 1 wherein said step b) of forming a digital  
image of said sample with a scanner includes the steps of placing said sample in a cylinder having  
a transparent end, placing said transparent end on a glass plate of said scanner, and blocking said  
plate.

4.     A method of testing as recited in Claim 2 further including the step of comparing said  
average lustre measurement to established parameters to assign a coefficient of thermal expansion  
(CTE) value to said sample to determine the CTE of said product, given historical correlation  
between CTE and lustre measurements.

1           5.     A method of testing as recited in Claim 1 further including the step of repeating all  
2 previous steps for successive samples and designating each sample as to low or high CTE.

1           6.     A method of testing as recited in Claim 1 further including the step of varying known  
2 operating parameters during petroleum refining to alter said lustre measurement of said sample in  
3 order to obtain a product with a desirable CTE.

1           7.     A method for testing a petroleum product in particle form to classify said product,  
said method comprising the steps of:

- 2                   (a)     placing a sample of said particles next to a calibrated optical density scale on  
a scanner;
- 3                   (b)     using said scanner to produce a visible reflection image of light from said  
sample particles and said optical density scale;
- 4                   (c)     creating a calibration curve of optical density versus gray scale using the  
optical density scale image; and
- 5                   (d)     determining the average gray scale value of the sample image and converting  
it to optical density using said calibration curve.

1           8.     A method for testing as recited in Claim 7 wherein step (a) includes the steps of  
2 placing said sample of particles in a container having at least one transparent side, and placing said  
3 transparent side on said scanner next to said calibrated optical density scale.

1           9.     A method as set forth in Claim 7 including the additional step of repeating steps a)  
2     through e) a plurality of times to obtain an average lustre measurement.

1           10.    A method as set forth in Claim 7 including the additional step of comparing said  
2     intensity measurement against established parameters.

1           11.    A method for testing as set forth in Claim 7 including the step of varying known  
2     operating parameters during petroleum refining to alter said lustre measurement of said sample in  
order to obtain a product with a desirable CTE.